

REMARKS/ARGUMENTS

Favorable reconsideration of this application, in light of the following discussion, is respectfully requested.

Claims 1-10, 15-18, 21-23 and 29 are pending in the present application.

In the outstanding Office Action, Claims 6, 7, 17, 18, 21, and 29 were rejected under 35 U.S.C. §102(e) as anticipated by Chang et al. (U.S. Patent Publication No. 2004/0100976, hereinafter Chang); and Claims 1-5, 8-16, 19, 20, and 22-28 were rejected under 35 U.S.C. §103(a) as unpatentable over Chang in view of Kokado et al. (U.S. Patent Publication No. 2003/0115327, hereinafter Kokado).

With respect to the rejection of Claim 6 as anticipated by Chang, Applicant respectfully traverses this ground of rejection. Claim 6 recites, *inter alia*,

an address translation unit including,

means for translating an address in accordance with  
*an address translation rule*, in order to transfer  
information *from a terminal on the global network to a*  
*terminal on the private network*, and

means for translating an address in accordance with a  
rule established on a per sending device basis, in order to  
transfer information from a terminal on the private network  
to a terminal on the global network; and

a database unit for recording the address translation  
rule, wherein

the address translation rule associates *a sending*  
*device* and destination *on the global network* with a  
destination on the private network, and

if *a sending device and destination of the packet*  
*received at the WAN interface* unit matches the sending  
device and destination on the global network of the address  
translation rule, the address translation unit translates the  
destination of the packet to the destination on the private  
network.

Chang does not disclose or suggest every element of Claim 6.

In the invention defined by Claim 6, the address translation rule associates the sending device on the global network, the destination on the global network, and the destination on the private network. It is noted that the sending device is in the global network because Claim 6 states “an address translation rule, in order to transfer information from a terminal on the global network to a terminal on the private network.” In the phrase “the sending device and destination on the global network,” “on the global network” modifies both sending device and destination.

By having an address translation rule that associates “a sending device and destination on the global network with a destination on the private network,” different address translation rules can be applied to packets having different source IP address. Accordingly, multiple servers on a private network can be made open to the public by using only one global IP address and the same port number. Multiple terminals on a private network can perform communication at the same time by using a protocol having no port number.

Chang’s Fig. 4 shows a NAPT table. With respect to Chang’ Fig. 4, translation condition of IP 401 is outer IP address 110 and translation condition of port 402 is data port 108.<sup>1</sup> Chang’s Fig. 4 does not include the sending device on the global network. Thus, Chang does not disclose the “address translation rule associates a sending device and destination on the global network with a destination on the private network.”

Chang mentions a sending device in some paragraphs, but Chang does not disclose the address translation rule associates the sending device in the global network with the destination on the global network and the destination on the private network. Chang’s Fig. 1 shows IP address 116 in the public network. However, as described in Chang’s paragraph [0035] with respect to Chang’s Fig. 4, IP address 116 is not included in the address translation rule. Rather, the translation rule only includes the address of the router (IP

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<sup>1</sup> Chang, paragraph [0033].

address 110 and port 108) and the private address 117 and private port 109 of the second device 103.

Chang states “When receiving an IP packet, the NAT router determines whether the source IP or destination IP address in the header of the IP packet matches with the address translation rules. If they are matched, an address translation is performed based on the content of the NAT table; otherwise, no address translation is performed.”<sup>2</sup> This description does not refer to a sending device on the global network. As explained in paragraph [0009] of Chang, the “source” in this context refers to a private network originated connection. The translation rule in Chang does not include the sending device on the global network.

In the paragraph [0010] Chang states “To overcome the aforementioned problem, RFC2663 proposes an extension system of network address translation, known as bi-direction NAT, which utilize a DNS-ALG (Domain Name System--Application Level Gateway) and a NAT router to achieve an effect of bi-directional connection. However, such a system suffers a disadvantage in that each public network originated connection must use an additional public outer address” (emphasis added). According to paragraphs [0007] and [0010] of Chang, the conventional address translation rule cannot open multiple servers on a private network by using only one global IP address and the same port number.

Chang also states “There is also provided a NAPT (Network Address and Port Translation) technique, ...With such a NAPT technique, a plurality of devices in the private network can share a public outer IP address (i.e., the outer IP address of the NAPT router) for communicating with devices in the public network.”<sup>3</sup> The NAPT makes a plurality of devices in the private network share a public outer IP address using Port Translation. Chang also states “The NAPT technique can normally process the private network originated

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<sup>2</sup> Chang, paragraph [0007].

<sup>3</sup> Chang, paragraph [0008].

connection, but not the public network originated connection.”<sup>4</sup> With such a NAPT technique, a device in the global network cannot send packets to a device in the private network first (i.e., prior to receiving packets from the device in the private network). The NAPT disclosed by Chang cannot open multiple servers on a private network by using only one global IP address and the same port number.

Generally, NAPT changes the port number and sends packets, when a device in the private network sends packets to a device in the global network. The NAPT stores the changed port number, and the NAPT changes the destination IP address of the packet sent by the device in the global network. The NAPT cannot change the destination IP address of the packet sent by the device in the global network before storing the changed port number. So with such a NAPT technique, a device in the global network can send packets to a device in the private network only after receiving packets from the device in the private network. With such a NAPT technique, a device in the global network cannot send packets to a device in the private network first (i.e., prior to receiving packets from the device in the private network).

Furthermore, Chang states “The object of the present invention is to provide a dynamic network address translation system and method of transparent private network device, in which the public network originated connection can be performed by dynamically changing the NAPT table, and all devices in the private network can share only one public outer IP address.”<sup>5</sup> Chang also states “The outer interface 120 provides a registration port 107 and a plurality of dynamically generated data ports 108. The registration port 107 is provided to receive connection registration request packets 112 transmitted from the first device 103. The data port 108 is provided to receive connection request packets 114 transmitted from external devices or receive data after connection is established.”<sup>6</sup> Thus,

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<sup>4</sup> Chang, paragraph [0009].

<sup>5</sup> Chang, paragraph [0015], emphasis added.

<sup>6</sup> Chang, paragraph [0025], emphasis added.

Chang opens multiple servers on a private network to the public by using one global IP address and plurality of port numbers. Therefore, multiple servers on a private network cannot be made open to the public by using one global IP address and the same port number according to the system described by Chang.

Thus, Chang does not disclose or suggest the claimed

the address translation rule associates *a sending device* and destination ***on the global network*** with a destination on the private network, and

if a sending device and destination of the packet received at the WAN interface unit matches the *sending device* and destination ***on the global network*** of the address translation rule, the address translation unit translates the destination of the packet to the destination on the private network.

In view of the above-noted distinctions, Applicant respectfully submits that Claim 6 (and any claims dependent thereon) patentably distinguish over Chang. Claims 21 and 29 recite elements analogous to those of Claim 6. Thus, Applicant respectfully submits that Claims 21 and 29 patentably distinguish over Chang for at least the reasons stated for Claim 6.

Claim 1 recites, *inter alia*,

the address translation rule associates a sending device and destination on the global network with a destination on the private network, and

if a sending device and destination of the packet received at the WAN interface unit matches the sending device and destination on the global network of the address translation rule, the address translation unit translates the destination of the packet to the destination on the private network.

Chang fails to disclose or suggest these features of Claim 1 for at least the reasons stated for Claim 6. Furthermore, Kokado fails to cure the deficiencies in Chang. The outstanding

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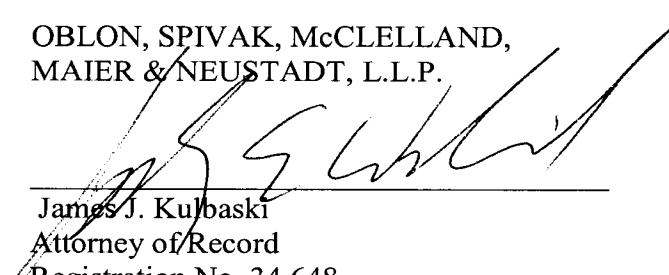
Office Action relies on Kokado to describe an “access control unit,” and not the “address translation unit.” Paragraphs [0191]-[0192] of Kokado describe an address conversion function. Particularly, paragraph [0192] states “converts the destination address GA and the destination port number 21 to an LA and an LP21 for the FTP server 2.” However, this section of Kokado does not disclose or suggest the above-noted features of Claim 1.

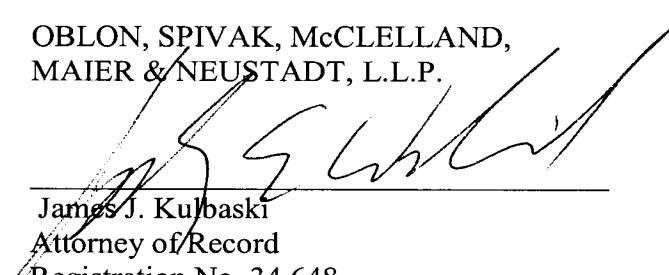
In view of the above-noted distinctions, Applicant respectfully submits that Claim 1 (and any claims dependent thereon) patentably distinguish over Chang and Kokado, taken alone or in proper combination. Claims 11 and 22 recite elements analogous to those of Claim 1. Thus, Applicant respectfully submits that Claims 11 and 22 patentably distinguishes over Chang and Kokado, taken alone or in proper combination, for at least the reasons stated for Claim 6.

Consequently, in light of the above discussion, the present application is believed to be in condition for allowance and an early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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